



MOSQUITO CONTROL PROGRAM

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MOSQUITO-BORNE DISEASE SURVEILLANCE

Presented: July, 2007

Updated: July, 2012

MOSQUITO CONTROL

SMALL BUT VITAL PROGRAM

- 0.5 Health Specialist FTE and a seasonal service worker are assigned to program
- \$4,000 budget for operations

MOSQUITO CONTROL

- GHD follows U. S. Centers for Disease Control recommended program methodology
- Staff licensed through Texas Department of State Health Services (DSHS) to purchase and apply insecticides for public protection. Licensure requires annual classroom training of staff
- DSHS began annual program audits in 2003; GHD has yet to have demerit

MOSQUITO CONTROL

- Since 2002, GHD has found WNV in only one mosquito species, *Culex quinquefasciatus*. The southern house mosquito.
- GHD's mosquito control activities are directed at the female “quinks” – she is the target species
- The female “quinks” is a timid, night-time feeder that prefers an avian blood meal, but will feed on humans and other mammals.
- She lays her eggs in stagnant, organic-rich water

MOSQUITO CONTROL



- GHD uses citizen calls as the sentinel for activity efforts.
- High numbers of mosquito landings, dead birds and stagnant water sites (swimming pools) are all used in the surveillance effort.
- Dead birds are not collected for study.

MOSQUITO CONTROL

What can citizens do?

- While outdoors in the evening, wear light-colored, long sleeve clothing, and use an insect repellent containing DEET.
- Eliminate any standing water on your property, such as birdbaths (clean them twice per week), pet water dishes, clogged rain gutters, stored tires, and buckets. Containers that can hold an inch or two of water can breed mosquitoes.
- Report any standing water that you are not able to eliminate yourself to the Health Department.

MOSQUITO CONTROL

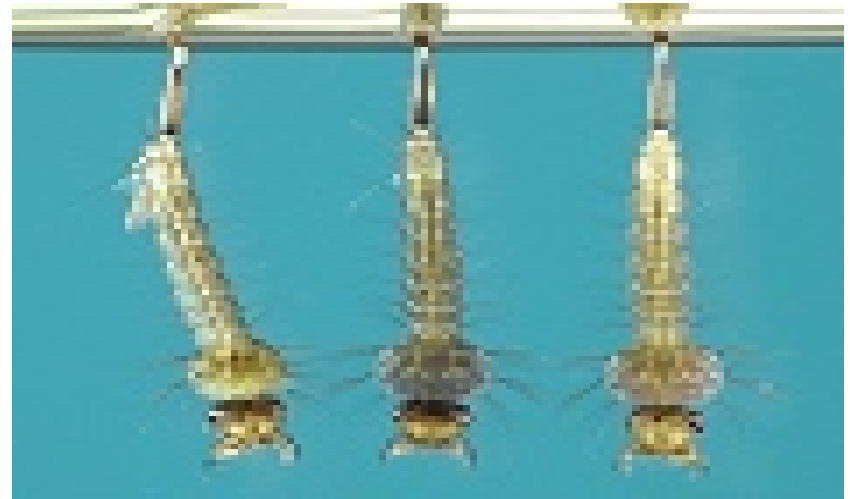


CITIZEN CALLS

2002	-	1447	(WNV first reported)
2003	-	1590	
2004	-	306	
2005	-	186	
2006	-	245	
2007	-	443	
2008	-	230	
2009	-	174	
2010	-	115	
2011	-	32	
2012	-	77	(through July 10)

MOSQUITO CONTROL

- Each call is logged and responded to by staff
- GHD uses two agents for larviciding:
 - Vectolex® (*B. sphaericus*)
 - Agnique®
- Both chemicals are non-toxic and environmentally safe



MOSQUITO CONTROL

- Gravid traps are selective for “quinks”
- The females that are trapped are lured in to the perfect egg laying site – she also will have had a blood meal prior to this egg laying



MOSQUITO CONTROL

MOSQUITOES TESTED FOR VIRUS ACTIVITY

2005 - 3,883

2006 - 3,366

2007 - 4,365

2008 - 4,782

2009 - 4,978

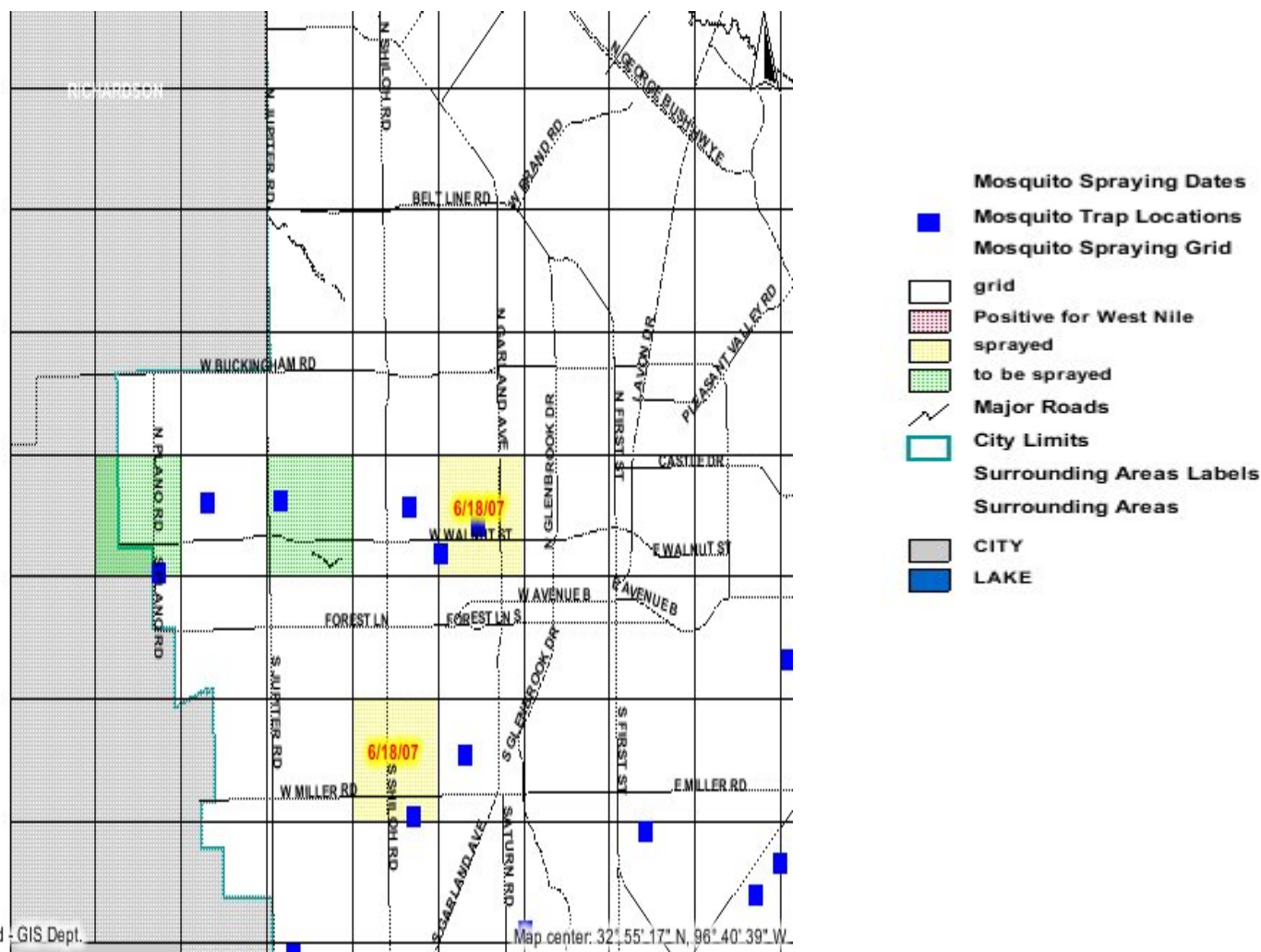
2010 - 4,635

2011 - 2,371

2012 - 2,562 (through July 10)



Spraying Information available on the Health Department Home Page



MOSQUITO CONTROL

In 2002, with the first virus found in a mosquito, GHD became a controller of disease-carrying mosquitoes and not a manager of nuisance species.

A grid is sprayed when:

- The number of female *Culex quinquefasciatus* is greater than 100 in one trap on one night
- A cluster of dead blue jays and/or crows is reported
- Confirmed or probable WNV or SLE case in human
- Confirmed WNV or SLE in a mosquito or bird specimen

MOSQUITO CONTROL

Miles of roadway sprayed:

2002 -	1,677 (WNV first reported)
2003 -	1,590
2004 -	2,691
2005 -	1,294
2006 -	268
2007 -	187
2008 -	166
2009 -	236
2010 -	72
2011 -	32
2012 -	129 (through July 10)

* Truck operated at night or early morning to reduce human & beneficial insect exposure



MOSQUITO CONTROL



- spraying Aqualuer 20-20 ® or Envion 30-30 ®
- active chemical agent in Aqualuer and Envion is **permethrin**
- Mixed with water it is applied at ~ 5.0 ounces per minute with the truck driving at 10 mph
- An estimated 5/100ths of a teaspoon of active agent in a microscopic mist lands on a typical residential lot (1/4 acre)

WNV Activity

<u>Year</u>	<u>+Mosquito</u>	<u>+Human</u>
2002	6	0
2003	34	4
2004	28	1
2005	32	5
2006	14	11
2007	12	2
2008	0	2
2009	13	1
2010	0	0
2011	0	2
2012 (through July 10)	16	0

GARLAND

The word "GARLAND" is rendered in a bold, blue, sans-serif typeface. A red five-pointed star is positioned above the letter 'R'. Two white, curved swooshes originate from the left side of the 'R' and sweep upwards and to the right, passing behind the star.